What is claimed is:

1. A stator of an electric machine, having an annular stator core (13) comprised of at least one stator core segment, having a welding seam (20) that joins the at least one stator core segment (14),
wherein its welding seam depth (T_S) is a function of a yoke height (H_{yoke}) and a tolerance value (ΔT_S) and is described by the function
$T_S = 0.5mm * (H_{yoke}/mm - 1) \pm \Delta T_S$.

2. The stator as recited in claim 1,
wherein ΔT_S corresponds to the variable ΔT_{S1}, which has a value of 1.0 mm.

3. The stator as recited in claim 1,
wherein ΔT_S corresponds to the variable ΔT_{S2}, which has a value of 0.5 mm.

4. The stator as recited in one of the preceding claims,
wherein the welding seam depth T_S does not fall below a minimum value T_{Smin}, which is a function of the yoke height H_{yoke}, and this minimum value T_{Smin} is described by a function
$T_{Smin} = 3/40 * H_{yoke}$.

5. The stator as recited in one of the preceding claims,
wherein the welding seam (20) is disposed on a radial outside (30) of the yoke (26).

6. The stator as recited in claim 5,
wherein the welding seam (20) is disposed on the outside (30) of the stator core (13), on a tooth composed of two partial teeth (24).

7. The stator as recited in one of the preceding claims,

wherein the welding seam (20) is disposed on at least one axial end of the stator core (13).

8. The stator as recited in one of the preceding claims,
wherein the welding seam (20) is a laser beam welding seam.

9. The stator as recited in one of the preceding claims,
wherein it supports a stator winding (17).

10. An electric machine, in particular a generator, having a stator (10) as recited in one of the preceding claims.